MATHEMATICAL LOGIC — ASSIGNMENT ONE

(1) Prove $\vdash (A \supset (B \supset C)) \supset ((A \supset B) \supset (A \supset C))$
(2) Show that in any distributive lattice for all x, y, and z,

$$x \vee (y \wedge z) = (x \vee y) \wedge (x \vee z) \ .$$

(3) Show that if $\vdash A \supset B$ then $[\![A]\!] \leq [\![B]\!]$ in every Boolean algebra.

Each question is worth 12 points. The points in all the four assignments will be added together and the result will be divided by 4, and this will be the final result. Remember to mark your answer sheet with your name.

Date: March 26^{th}, 2024.